

Some Causes of the Decline in the Numbers of Lepidoptera

By H. SYMES

These notes were inspired by the Editor's appeal in the October 'Record' (79: 266) and consist of a list, based on the writer's personal observation, of causes that have led to the reduction, or even extinction, of the butterfly population in certain specified areas, and the species principally affected. I have included the names of a few local moths and of one dragonfly. Other entomologists no doubt will have lists of their own. I have arranged mine in alphabetical order, so as to avoid indulging personal prejudices by placing causes in any order that might imply precedence in the rogues' gallery.

1. (a) Afforestation, which generally means felling of hardwoods or ploughing up heathlands and replanting with conifers.
(b) Examples of localities:—The New Forest, Hell Coppice, Ham Street, some Dorset woodlands and heaths, e.g., near Wareham.
(c) Species affected:—*Argynnis paphia* L., *Limenitis camilla* L. (N.F.), *Apatura iris* L., *Strymon pruni* L., *Dicycla oo* L., *Catocala prom-misa* Schiff. (H.C.).
2. (a) Building development.
(b) Outskirts and environs of Bournemouth, mainly heathland.
(c) *Coscinia cribraria* L.
3. (a) Climatic conditions:—Between 1959 and 1967 we had seven poor summers in succession. The cumulative effect of these must have been considerable. During this period, there was one winter of exceptional severity (1962-3). Such a winter is generally considered to be favourable to lepidoptera, partly because they suffer less than their predators. Moreover, a hard winter is often followed by a fine summer, as was the case in 1929 and 1947, both good years for lepidoptera. but this did not happen in 1963.
4. (a) Draining of marshland.
(b) West Parley (Dorset).
(c) *Oxygastra curtisii* (Neuroptera).
5. (a) Heavy grazing.
(b) Hod Hill, Winspit.
(c) Lycaenidae, *Euphydryas aurinia* Rott., *Hesperia comma* L., *Parasemia plantaginis* L., *Procris geryon* Hübn.
6. (a) Insecticides.
(b) I have no particular localities in mind.
(c) A year ago thousands of honey bees were killed in Dorset, and it is most unlikely that lepidoptera would have escaped from the wide-spread spraying.
7. (a) Mechanical shaving of grass verges and banks along country roads.
(b) Almost anywhere in E. Dorset and W. Hants.
(c) *Euchloe (Anthocharis) cardamines* L., Satyridae, Vanessidae, *Lycaena phlaeas* L., *Cucullia lychnitis* Ramb.
8. (a) Motor cars.
(b) Everywhere. They carry thousands of family parties complete with dogs to localities previously unfrequented. To quote from a

recent newsletter of the Dorset Naturalists' Trust: "It is so easy to keep a bird off its nest a little too long, tread on a rare plant, or even sit down on a most important caterpillar without in the least realising what one is doing". It is also easy to start a fire.

- (c) No species is exempt from this danger. At Badbury Rings the most affected are *Argynnis aglaia* L. and *Hesperia comma* L.
9. (a) Myxamatoxis. This disastrous epidemic has upset the balance of nature; lepidoptera and entomologists have suffered from its consequences as well as foxes and buzzards. Rabbits used to control the growth of coarse grasses and other rank vegetation, including seedling bushes, especially hawthorn, and prevent the smothering of less vigorous growths such as the Leguminosae which are the food plants of *Leptidea sinapis* L. and most of the Lycaenidae.
- (b) Hod Hill, Ridge Copse (near Fareham).
- (c) Hod, see 5 (c): Ridge, *Nola albula* Schiff., *Acosmetia caliginosa* Hübn.
10. (a) Ploughing up of grassland.
- (b) Winspit (Purbeck), Homerton, Camp Hill and Coombe Bissett (near Salisbury).
- (c) Lycaenidae.

I have not mentioned the part played by birds. Prof. Willmer considers them the main culprits. He points out that the number of birds of prey has been greatly reduced, directly by shooting, and indirectly by insecticides, and that as a result the number of small birds, especially starlings, has increased. Unfortunately it is only too true that birds of prey, especially sparrow hawks, have become very scarce, and starlings excessively abundant. The only other birds that seem to me to have become more plentiful during my lifetime are jackdaws and magpies. Both these birds are determined egg-stealers, and I have heard from reliable sources that jackdaws played a big part in exterminating the chough in Cornwall and very nearly doing so to the Kite in Central Wales. By robbing the nests of smaller birds they would have tended to benefit the butterfly population, even if starlings, a pantophagous crowd, are harmful to it. Have the small birds that are almost entirely insectivorous really increased in number? Swallows have certainly decreased, and our resident species, especially the wren, the Dartford warbler, and the song thrush, were badly hit by the exceptionally severe winter of 1962-3. I believe that the number of small insectivorous birds has not increased, but that their feeding grounds have been restricted and this has led to more intensive hunting by the birds and less chance of survival by the insects.

A 1958 Survey of the Butterflies of Blackmoor Copse Nature Reserve

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I. INTRODUCTORY NOTE

In 1958 I wrote for the Society for the Promotion of Nature Reserves a Survey of the butterflies of Blackmoor Copse which has not previously been published with the exception of the notes on one species, and which